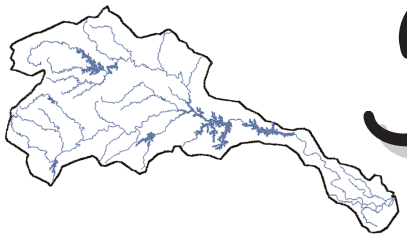
Roanoke River Basin



9,580 square miles of watershed, flowing from the foothills of the Blue Ridge Mountains to the Albemarle Sound of North Carolina

Our RESERVOIRS

- Philpott Reservoir
- Leesville Lake
- Smith Mountain Lake
- Kerr Lake (Buggs Island)

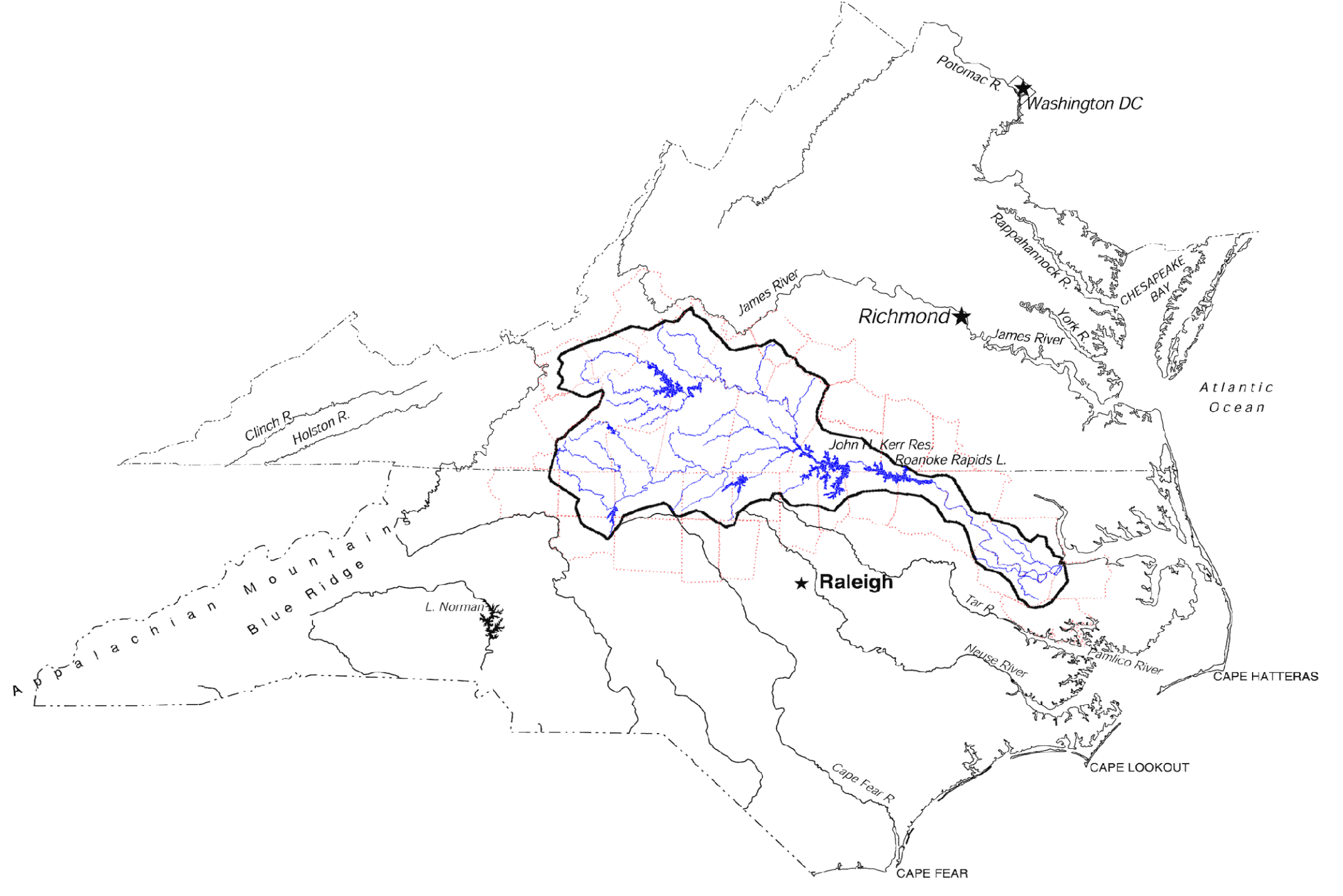
Our RIVERS

- Roanoke River
- Staunton River
- Dan River

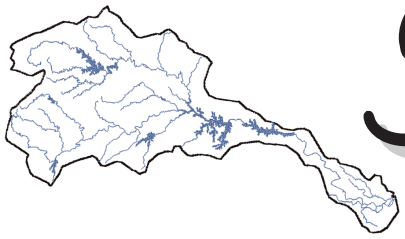
Our TRIBUTARIES

- Little Otter, Big Otter, Blackwater, Pigg, Falling River, Goose Creek, Tinker Creek of the Roanoke and Staunton
- Hyco, Banister, Smith of the Dan

and Our numerous other CREEKS AND STREAMS provide industrial resources, agricultural resources, hydroelectricity, and recreation, sustaining an ecosystem and a way of life that has existed for centuries.


Potomac R.
Washington DC
Rappahannock R.
CHESAPEAKE BAY
James River
Richmond
York R.
James River
Atlantic Ocean
Clinch R.
Holston R.
John H. Kerr Res.
Roanoke Rapids L.
Appalachian Mountains
Blue Ridge
Raleigh
L. Norman
Tar R.
Neuse River
Pamlico River
CAPE HATTERAS
CAPE LOOKOUT
Cape Fear R.
CAPE FEAR

Roanoke River Basin



9,580 square miles of watershed, flowing from the foothills of the Blue Ridge Mountains to the Albemarle Sound of North Carolina

Issues Concerning the Rivers

Water Quantity
&
Drought

"period of abnormally low rainfall which causes a negative flow of water"

Environmental Effects

- lower water flows and levels, higher temperatures
- groundwater depletion
- recovery possible only through sustained rainfall

Social Effects

- reductions of discharge rate from reservoirs
- restrictions on nonessential water use

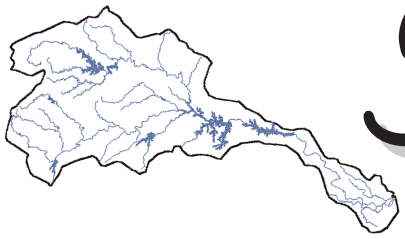
Economic Effects

- farmers experience crop loss or decrease in quality
- industries that need fresh water to operate are affected
- power companies may be forced to purchase power from market

During the drought of 2002, streamflows set record daily lows and fell to under the 10th percentile.

There is a need for supplemental water, perhaps by creating more storage through impoundment projects.

Roanoke River Basin



9,580 square miles of watershed, flowing from the foothills of the Blue Ridge Mountains to the Albemarle Sound of North Carolina

Issues Concerning the Rivers

Water Quantity
&
Flooding

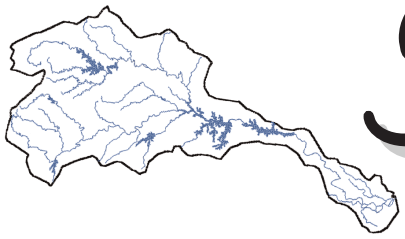
"the Roanoke River floods the city of Roanoke approximately every seven years"

Environmental and Social Effects

- erosion damage
- destruction of trees, seedlings, and wildlife
- possible overrun of sewage into rivers and streams
- property damage
- death

Upstream dams are effective at reducing the magnitude of flooding. However, because dams increase the duration of flooding during growing season, some improvements may be necessary.

Roanoke River Basin



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Issues Concerning the Rivers

Water Quantity
&
Water Withdrawals

Municipalities

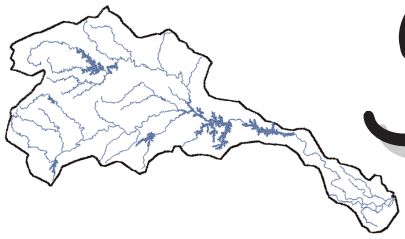
- Virginia
  - Danville, Martinsville, Bassett, Moneta, Rocky Mount, Brookneal, Altavista, Lawrenceville, Chatham, Roanoke, Salem, Halifax, South Boston, Clarksville and more
  - Lake Gaston supports Virginia Beach via a 76-mile pipeline.
- North Carolina
  - 18 municipalities
  - Section 216 Study at Kerr Reservoir
    - Raleigh and Durham are currently studying to determine if Kerr Lake could be used for the longterm water needs of the Triangle area.

Industries

- Vepco Clover Power Plant (now Dominion)
  - sued in 2000 and forced to reduce harmful emissions
- Dominion Generation Power Plant project
  - controversy over interbasin transfer issues
  - project rejected 2003

Many industries, such as paper mills, wood chip mills, and power plants find the rivers of the Roanoke basin attractive. These industries, however, can have a major impact on a river's resources.

Roanoke River Basin



9,580 miles of watershed, flowing from the foothills of the Blue Ridge Mountains to the Albemarle Sound of North Carolina

Issues Concerning the Rivers

Water Quality & Impaired Rivers

See attached Table 1 - Impaired Rivers of the Roanoke Basin

Problems

- Fecal Coliform: bacteria count fails to meet swimming requirements
- PCB Advisory: man-made chemicals no longer produced, but do not easily dissolve in water
    - fish sampling by the Department of Environmental Quality shows PCBs above 600 parts per billion
    - Dan River 42-mile advisory
    - Staunton River 79-mile advisory
- General Standard (Benthic): degradation of benthic organisms, which live on the bottom of lakes
- Low Dissolved Oxygen: rapid decline in oxygen levels which can result in extensive fish deaths

Sources

- Non-point (NPS)
    - Urban - pollution due to urban activities such as development
    - Agriculture - pollution due to farming activities, such as pesticides
- Point (PS)
    - Municipal - pollution due to municipal or industrial facilities
    - Kerr Dam
- Others
    - Hydromodification, urban runoff/storm sewers, combined sewer overflow

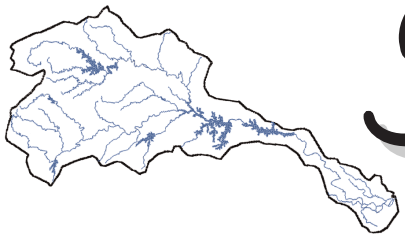
Table 1 - Impaired Rivers of the Roanoke River Basin

(courtesy of Department of Environmental Quality)

STREAM	MILES	PROBLEM	SOURCE
Wilson Creek	5	Fecal Coliform	NPS - Urban
Ore Branch	3.9	Fecal Coliform	NPS - Urban
Roanoke River	11.72	Fecal Coliform	NPS - Urban
Glade Creek	5.75	Fecal Coliform	NPS - Urban
Lick Run	3.5	Fecal Coliform	NPS - Urban
Tinker Creek	19.06	Fecal Coliform	NPS - Urban/Agri
Roanoke River	6.26	Fecal Coliform	NPS - Urban/Agri
Blackwater River	9.83	Fecal Coliform	NPS - Agri
Blackwater River	15.78	Fecal Coliform	NPS - Agri
North Fork Blackwater River	11.48	Fecal Coliform	NPS - Agri
South Fork Blackwater River	6.05	Fecal Coliform	NPS - Agri
Maggodee Creek	21.13	Fecal Coliform	NPS - Agri
Blackwater River	20	Fecal Coliform	NPS - Agri
Gills Creek	27.97	Fecal Coliform	NPS - Agri
Pigg River	20	Fecal Coliform	NPS - Urban/Agri
Storey Creek	11.66	Fecal Coliform	NPS - Urban/Agri
Pigg River	14.31	Fecal Coliform	NPS - Agri
Sheeps Creek	7.33	Fecal Coliform	NPS - Agri
Elk Creek	7.48	Fecal Coliform	NPS - Agri
Little Otter River	27.22	Fecal Coliform	NPS - Urban/Agri
Machine Creek	20	Fecal Coliform	NPS - Agri
Big Otter River	14.75	Fecal Coliform	NPS - Agri
Roanoke River	8.34	Fecal Coliform	NPS - Agri
Roanoke River	55.79	VDH Advisory (PCBs)	Unknown
Falling River	7.61	Fecal Coliform	NPS - Agri
Ash Camp Creek	2.6	Gen. Standard (Benthic)	PS - Municipal
Twittys Creek	7.24	Gen. Standard (Benthic)	PS - Municipal
Roanoke River	18.24	Fecal Coliform	Unknown
Difficult Creek	5.8	Fecal Coliform	Unknown
Dan River	10.16	Fecal Coliform	NPS - Agri
South Mayo River	6.52	Fecal Coliform	NPS - Agri
Smith River	15	Gen. Standard (Benthic)	PS & NPS - Urban
Fall Creek	12.18	Fecal Coliform	NPS - Urban
Dan River	42.8	Fecal Coliform	Unknown
Birch Creek	4.6	Fecal Coliform	Unknown
Cherrystone Creek	13.96	Fecal Coliform	NPS - Urban/Agri
Banister River	10.8	Fecal Coliform	Unknown
Banister River	12.26	Fecal Coliform	Unknown
Roanoke River	9.46	Dissolved Oxygen	PS - Upstream Dam (Kerr)
Flat Creek	8.95	Gen. Standard (Benthic)	PS - Municipal

***TOTAL MILES: 542.49 (plus EPA add-ons)**

Roanoke River Basin



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Issues Concerning the Rivers

Fishing & Recreation

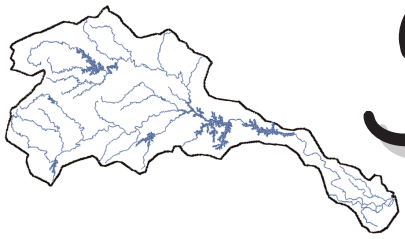
Outdoor recreation is a popular pasttime around the Roanoke River Basin. Activities include boating, paddling, and fishing.

A wide variety of species of fish live in the Roanoke River Basin, such as striped bass, smallmouth bass, largemouth bass, white bass, sunfish, walleye and catfish.

Trout fishing is prevalent as well, with many rivers and streams being stocked each year by the Department of Game and Inland Fisheries. The Roanoke River is part of a preservation program which allows trout to be caught and kept only from June through September.

Currently, private property owners along rivers and streams have many concerns. Private propery owners make many trout fisheries possible, but some waters will no longer be stocked due to issues such as litter from anglers. There are concerns about boating and docking on private property as well.

Roanoke River Basin



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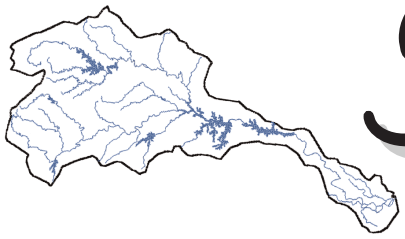
Supporting Organizations

Blue Ridge River Runners
Biohabitats of Virginia, Inc.
Blue Ridge Voyagers
Citizens for the Preservation of the River
Clean Water Action
Environmental Defense Fund
Float Fishermen of Virginia, Inc.
Friends of the Rivers of Virginia
Friends of the Roanoke River
Historic Rivers Land Conservancy
Kerr-Buggs Island Safety Council
Lake Gaston Association
Roanoke River Basin Association
Roanoke River Partners
Rockingham County Watershed Preservation Coalition
Sierra Club, Virginia chapter
Southern Environmental Law Center
Virginia Audubon Center
Virginia Canals and Navigations Society
Virginia Conservation Network
Virginia B.A.S.S. Federation
Virginia Council of Trought, Unlimited
Virginia Lakes and Watersheds Association

Roanoke River Basin



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Scenic Rivers

"river or stream whose scenic beauty, historic importance, recreational significance and natural characteristics make them resources of particular importance"

How is a scenic river designated through the Scenic River Program?

- river is studied through request by the Department of Conservation and Recreation to determine qualification
    - includes map survey, literature review, and field study
- report is proposed to the General Assembly
- administrating agency checks on river periodically

What does Scenic River designation do?

- the impact of hydropower projects on a scenic river is considered by The Federal Energy Regulatory Commission
- provides opportunity for government agencies to consider scenic values of river during the planning of such projects
- requires authorization of General Assembly for construction and modification of any structure that impedes the river's natural flow
- provides landowners, as well as local citizens and governments, greater influence over projects which might affect the river

Within the Roanoke River Basin, 40.5 miles of the Staunton River is designated a Scenic River.